

NATURAL HERITAGE CONSERVATION PROGRAM

**2018
FIELD
NOTES**



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Outfitting tiny turtles and bats with transmitters, pollinating rare orchids by hand, and restoring thousands of acres of habitats, including some of our rarest. These “Field Notes” describe a few ways we worked together to care for Wisconsin’s rarest plants, wildlife and special places this year.

Thank you! Whether you’re a donor, a volunteer, a partner, a magazine subscriber, or just came for the beautiful frog photo, you are an important part of a growing team working to conserve Wisconsin’s natural heritage. You’ll find much to celebrate in these pages and in our companion videos and magazine articles. Yet we know there is also much work ahead. You may know that more than one-third of the United States’ fish and wildlife species are at risk of

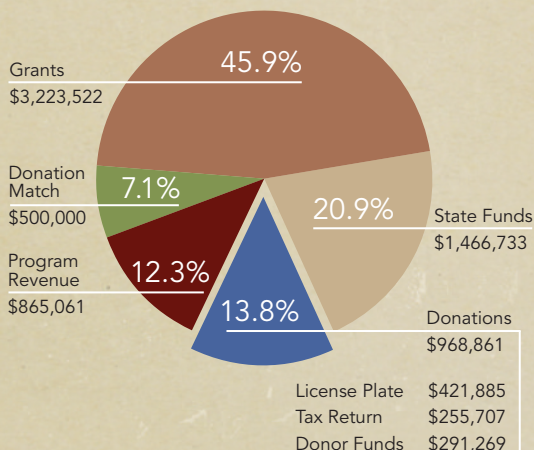
becoming endangered. Our job is to prevent that from happening, wherever possible, and to conserve what we have inherited.

Recently, leaders from outdoor recreation, energy and retail companies, along with hunting and fishing groups, conservation organizations, agencies, landowners and many others brainstormed much-needed conservation funding strategies for the U.S.; this even led to a federal bill titled the “Recovering America’s Wildlife Act.” Time will tell where those efforts lead, but for now, we are committed to addressing our most important conservation needs with your help.

Our goal is to inspire you to action, whether it’s volunteering, donating, or even just visiting our website (dnr.wi.gov, keyword “NHC”) to learn more. We can’t do this without you! I also welcome opportunities to visit with groups and organizations in person to learn how we can work together to conserve our natural heritage.

Drew Feldkirchner

Your donation makes a difference (FY 2018 Revenue)



All donations are matched dollar for dollar by the state, so double the difference you make for rare species and State Natural Areas.

- Donate online or by check
- Donate directly on your 2018 state income tax form
- Buy an endangered resources license plate



Become a donor today: dnr.wi.gov, keyword “NHC.”

TIME FOR TURTLES

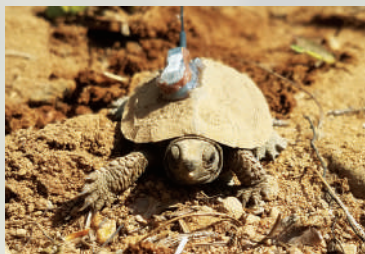
Tracking tiny turtles

Twenty tiny turtles are the latest recruits aiding conservation of wood turtles, a threatened species in Wisconsin. Hatchlings were outfitted with transmitters and are being tracked as part of a pioneering UW-Madison and NHC project to assess their movements, habitat and first-year survival. The information will help determine if hatchlings survive at high enough rates to warrant continuing NHC nest restoration and protection as a major conservation strategy.



TIFFANY BOUGIE

A transmitter is glued to a hatchling's shell.

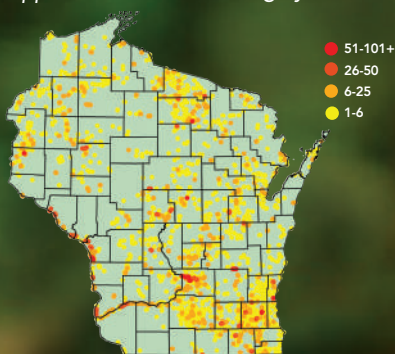


TIFFANY BOUGIE

Only larger turtles get transmitters, which weigh one-tenth of what the turtle does.

2012-2018 Wisconsin turtle crossing hot spots

Approximate turtle crossings/year



Crossing to safety

Turtle safety is steadily improving, along with knowledge of turtle distribution and rarity, thanks to NHC's Wisconsin Turtle Conservation Program and volunteers who in 2018 turned in 1,447 reports, up 106 percent from 2017. The reports identified turtle crossing hot spots and documented previously unknown populations of rare turtles. Such reports help raise awareness and spur action on deadly crossings. Report turtles: wiatri.net/inventory/witurtles.



JANE SIMKINS



JACK BARTHOLMAI

A black tern feeds its young.

Bushwhacking for black terns

Black terns are the smallest of Wisconsin's four endangered terns and migrate the farthest – and they just may be the hardest to find. However, after analyzing aerial wetland photos, historic nesting records, and Wisconsin Breeding Bird Atlas II reports, NHC ecologists canoed, kayaked and bushwhacked to 366 wetland sites in 49 counties and discovered more terns at more sites than expected: 128 colonies in 33 counties and 2,800-plus breeding adults. By 2020, they'll produce a comprehensive statewide report on black tern distribution, population size and habitats to inform conservation planning.



ROBERTA HERSCHLEB

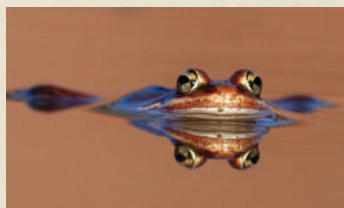
Finding floral gems

Citizen scientists trained through NHC's Rare Plant Monitoring Program collected more information on Wisconsin's rare plants in 2017 than all previous years combined. In 2018, 65 citizen scientists assigned to specific sites collected data on dozens of priority species including jeweled shooting star (*Primula fassettii*). Roberta Herschleb gathered detailed information on a population last seen in the 1990s, now understood to be one of Wisconsin's largest. Such information improves NHC's understanding of how these fragile species are doing and allows us to take action to protect them.

Citizen scientists significantly increased knowledge about jeweled shooting star locations.

BEHIND THE COVER

NHC conservation biologist Ryan Brady took this amazing photo of an intriguing amphibian, a wood frog, near his Bayfield County home. Wood frogs sound like quacking ducks, prefer moist forests and breed in "ephemeral" ponds created by snow melt and spring rains. They have the shortest breeding window of any Wisconsin frog, lasting only about two weeks.



We're happy to report that in 2018, NHC completed an important project to help safeguard this critical fish-free breeding habitat for wood frogs, salamanders and other species. NHC staff developed criteria to help classify ephemeral ponds on public lands and rank their relative importance based on abundance of breeding amphibians, lack of invasive species, and other factors. Their information informs DNR master planning and will help conserve these valuable wetlands.

BIG BUZZ FOR BEES

Bumble Bee Brigade launches

Faced with declining populations and limited information on the distribution and conservation needs of Wisconsin's 20 native bumble bee species, NHC staff in 2018 created the Bumble Bee Brigade. This citizen-based monitoring project trains volunteers to survey for and photograph bumble bees. In its pilot year, 93 volunteers submitted 845 observations, including finding the endangered rusty patched bumble bee in seven new counties, bringing to 28 the total of counties with recent observations. The Bumble Bee Brigade will open statewide in spring 2019. Get involved: wiatri.net/inventory/bbb.

Partnering for pollinators

A successful partnership that has already restored more than 13,000 acres of habitat for at-risk species on the ancient Driftless landscape will zero in on restoring habitat for the endangered rusty patched bumble bee. NHC's Landowner Incentive Program and Minnesota DNR will use their \$500,000 grant to provide technical advice and cost-sharing to public and private landowners in the Driftless Area. The grant also will help continue training landowners to survey their property for endangered bees.

The endangered rusty patched bumble bee has now been found in 28 counties thanks to efforts by the Bumble Bee Brigade.

NHC staff and a landowner look for rare pollinators on her land.



JANE SIMKINS

JAY WATSON



Citizen scientist Maureen Gross documented blue-ringed dancers in a new watershed.

DALE GROSS



Mink frog

BOB HAY

On the trail of a rare damselfly

Since the discovery of the blue-ringed dancer in Wisconsin four years ago, NHC staff and volunteers have surveyed area rivers to accurately describe its rarity. They found a robust population in the Bark River in Waukesha and Jefferson counties but none elsewhere until July 2018. Citizen scientist Maureen Gross found hundreds breeding in a creek in the Mukwonago River watershed in Walworth County, showing the damselfly is not limited to just one watershed, important insurance against catastrophic events. Volunteers are needed to survey in 2019: wiatri.net/inventory/odonata/survey.

Ears up for daytime frog calls

Mink frog populations are believed to be low and because these frogs often call in daytime, they are not always counted by Wisconsin Frog and Toad Survey volunteers listening for frogs at night. So NHC biologists recruited volunteers to listen twice during the day and twice at night on set routes. This effort has had early success documenting new sites, but more volunteers are needed in 2019 to listen for a call likened to "horse hooves on a cobblestone street." Find out more: wiatri.net/inventory/frogtoadsurvey.

Teaming up to fight invasive species

Invasive plants and animals are major threats to Wisconsin's rare species and NHC is now leading DNR's team tackling them. Among other gains in 2018, the team secured and distributed grant funds to control invasive species on state lands, laid the groundwork to add to the list of regulated invasive species, and is working with the nursery, pet and bait industries to prevent selling and distributing regulated species. NHC also is coordinating rapid response to a newly discovered invader, a fast-growing vine that spreads by underground tubers.

Look for the golden creeper (*Thladiantha dubia*) along rivers and report it: invasive.species@wi.gov.



The very rare and elusive western wormsnake has been found at a third site in Grant County.

JOHN PETERSON

A+ for rare snake discovery

The western wormsnake is exceedingly rare in Wisconsin and fossorial, meaning it spends nearly all its active time under ground or rocks. It also grows to only 12 inches, adding to the difficulty finding it. That's why the 2018 reconfirmation of a healthy known population in Grant County by UW-Platteville professor John Peterson, on contract with NHC, and by citizen scientist John Burris is such good news. Most impressive? The discovery of a new population in Grant County by Peterson's students Caleb Cizauskas and Hanna Tydrich.

EDDIE SHEA



Smile! NHC staff and partners reintroducing Higgins eye mussels to the Chippewa River.

MUSSEL MANIA

More mussels for major rivers

Freshwater mussels are globally and locally imperiled — 24 of Wisconsin's 52 species are rare or declining — so NHC is helping federal partners reintroduce them to major rivers. In 2018, partners planted thousands of endangered Higgins eye, winged mapleleaf and salamander mussels into the Chippewa River, and NHC won a grant to place endangered snuffbox mussels in the Wolf River in 2019. Establishing new populations will help expand the native mussels' range and protect them from invasive zebra mussels.

One day, hundreds of mussels

NHC biologists and volunteers found healthy populations of Wisconsin's newest native mussel species, the eastern pondmussel (*Ligumia nasuta*), in four more lakes in the Three Lakes Chain and below a dam in the Eagle River Chain, in Vilas and Oneida counties. These are important discoveries because these waters are free of invasive zebra mussels and can serve as a refuge for the eastern pondmussel if it declines elsewhere. Submit mussel photos to the Wisconsin Mussel Monitoring Program: wiatri.net/inventory/mussels.

NHC staff record eastern pondmussels and other species collected during a single-day "bioblitz."

BRENTON BUTTERFIELD

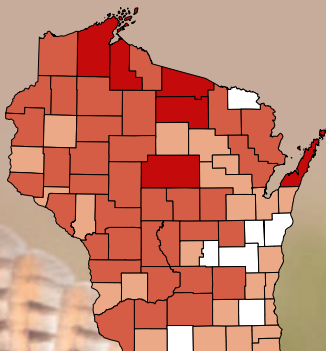
BRENTON BUTTERFIELD

EYES TO THE SKIES

Help bird survey fly through the tape

Wisconsin Breeding Bird Atlas II, a statewide citizen-science project to map all of Wisconsin's breeding birds, enters its final year of fieldwork and we need all eyes to the skies to help finish! While 85 percent of priority survey areas are completed or underway, many need more help. Volunteer to survey one of them or report birds nesting or engaging in other breeding behaviors. Data entry is easy and online — and there's an app for that! Get started: wsobirds.org/atlas.

Darker colors show areas needing volunteers



Four new species found in 2018 could be breeding in the state, so be on the lookout and report them, including barn owls in southwestern Wisconsin.



WAYNE RUNDELL

Eared grebes were found in Columbia County.



NICK ANICH

A yellow-crowned night-heron was sighted in Jefferson County.



RYAN BRADY


A pair of American three-toed woodpeckers were sighted in Bayfield County.

IAN DAVIES

SAVING THE BEST FOR YOU

Taking stock and safeguarding old forests

NHC biologists surveyed more than 50 of Wisconsin's state properties to document their plants, wildlife and ecosystems. Their work is expected to secure greater protection late this year for two pristine trout streams and old forests in South Shore of Lake Superior Fish and Wildlife Area in Bayfield County. The proposed designations as State Natural Areas show how NHC's "biotic inventory" work helps safeguard high-quality lands while keeping them open for all to enjoy.



A big hug
for old trees
along Lake
Superior.

Volunteers vanquish phragmites

Volunteers wrapped up six years of cutting and treating more than 50,000 bundles of invasive phragmites at Cherokee Marsh State Natural Area in Madison — and that's just one inspiring example of how 35 volunteer groups directly impacted 3,464 acres at State Natural Areas last year.

Volunteers worked at 43 State Natural Areas to control invasive species and collect and plant native seeds.



JARED URBAN

RYAN BRADY

Pining for pollinators

One in six native butterfly species in North America is at risk, so NHC is boosting habitat and monitoring efforts, including surveying in 2018 for a trio of rare butterflies. Unfortunately, biologists didn't find any poweshiek skipperlings or northern blue butterflies during specific searches, but citizen scientist Sandy Vorpahl found swamp metalmark while monitoring one of the two known sites over the summer. Only two butterflies were seen at that site. Learn how to report and help rare pollinators: wiatri.net/nhi.

Swamp metalmark butterflies are down to two known sites in Wisconsin.



One in five Wisconsin bird species is at risk, including the golden-winged warbler.



NHC staff used toothpicks to extract and transfer pollen to eastern prairie fringed orchids to boost their genetic stock.

Kirtland's warbler



NICK ANICH

Rare songbird sings a happy song

Kirtland's warblers are singing a happy song these days. The U.S. Fish & Wildlife Service has determined the songbird has clearly met recovery goals after years of intensive habitat management, mostly in lower Michigan where the core population is found, and USFWS has proposed removing it from the federal endangered species list. The warbler's numbers aren't high enough to fly off Wisconsin's endangered species list yet but NHC and partners are committed to continuing conservation efforts.

Bird benefits to tweet about

From identifying 92 Important Bird Areas, to engaging people in bird monitoring and establishing more than 100 Bird City communities, the Wisconsin Bird Conservation Initiative has had a big impact for birds in the coalition's first 15 years. Now, partners including NHC, birding clubs, conservation groups, nature centers, universities and businesses, are building on their success with a new strategic plan that includes using Important Bird Area designations to spur local protection, management and acquisition projects. Learn more: www.wisconsinbirds.org.

Helping hand for a rare orchid

NHC staff in 2018 played pollinator to Wisconsin's rarest orchid, the eastern prairie fringed orchid, to aid its long-term survival. Habitat loss and invasive species in southeastern wet prairies have led to inbreeding and shrinking orchid populations, which in turn means pollinators have failed to find the plants and pollen is not moved between populations. So biologists hand-pollinated plants at eight sites to introduce new genes and improve seed set and viability. True success won't be evident until years from now when future generations of genetically diverse orchids emerge.

JAY WATSON

RYAN BRADY

KEVIN DOYLE



ONE STEM AT A TIME

Mobilizing for monarchs

Monarch butterfly populations have plunged more than 80 percent over the last 20 years in the eastern U.S., and NHC is part of a new consortium working to reverse the decline in Wisconsin by adding 120 million more native milkweed plants, or “stems,” by 2038. The Wisconsin Monarch Collaborative includes more than 40 organizations and 70 individuals representing agriculture, transportation, utilities, public and private land management, research, education and government. Adding even a few milkweed along with nectar plants to your yard, back 40 or balcony helps monarchs. Learn more: wiatri.net/projects/monarchs.

Bluff work benefits butterflies

NHC crews maintained and restored monarch habitat on thousands of acres in 2018, including at Ferry Bluff State Natural Area along the Wisconsin River in Sauk County, where they removed nonnative and undesirable woody species. Seeds collected this fall from a small undisturbed section of prairie plants at the site will be spread over the area to provide higher quality, more diverse habitat for monarchs, other pollinators and wildlife. Along the Mississippi River, SNA crews used prescribed fire, girdled aspen, and removed brush to enhance 500 acres of monarch habitat.



Monarch caterpillars can eat only native milkweed.

RYAN BRADY

NATURE FOR ALL OF US

Cherishing now and future generations

Donations from hunters, anglers and state park users to the Cherish Wisconsin Outdoors Fund are safeguarding rare landscapes and improving outdoor recreation. The fund, established by the Natural Resources Foundation of Wisconsin, supported NHC crews in improving trout stream habitat, prairie, fen and sedge meadow on natural areas in the Southern Kettle Moraine State Forest. A second Cherish award funded restoration of floodplain savanna habitat at the recently acquired Tyrone Tract of the Lower Chippewa River State Natural Area in Dunn County, greatly improving wildlife habitat and recreation.

Preserving prairies

Favorable weather for prescribed burns fueled a 34 percent increase in total burned acres, benefiting Wisconsin's rare prairies, barrens, grasslands, oak savannas and woodlands. In addition, NHC crews removed brush, mowed, sprayed and pulled invasive plants at these and other state natural areas. These special places are home to 75 percent of at-risk wildlife species and 90 percent of at-risk plant species and are open to birdwatchers, hikers, hunters, anglers and others.



Prescribed burn at York Prairie State Natural Area.

NATE PAYRAM

JOSH MAYER

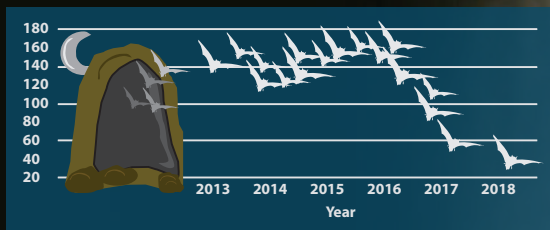
A MIXED BAG FOR BATS

NHC winter surveys of bat hibernacula and volunteers' summer monitoring in 2018 documented the decimation of Wisconsin's cave bats, particularly little brown bats, by white-nose syndrome. Surveys also revealed information on surviving bats that will help guide recovery efforts — and a surprise. Staff found five silver-haired bats in a mix of caves and mines, the first time this typically migratory species has been documented in traditional hibernacula in winter in Wisconsin. NHC staff also continued aiding field trials for WNS vaccines and treatments and other research. They expanded outreach, moving the Wisconsin Bat Festival to northern Wisconsin and making presentations to 7,000 people. Keep up with bat news and volunteer opportunities: wiatri.net/inventory/bats.



A silver-haired bat found in Wisconsin hibernacula in 2018.

HEATHER KAARAKKA



White-nose syndrome has decimated Wisconsin's little brown bat populations (shown in thousands of bats.)



Smiling despite below-zero temperatures, NHC staff get ready to survey a mine for bats.

DNR FILES

A. M. KILPATRICK



Join us in 2019 as we celebrate 15 years of citizen scientists making their science count for Wisconsin. Learn more at the Wisconsin Citizen-based Monitoring Network: wiatri.net/cbm.



MICHAEL KIENTZ

Ansel Brenneman

Ansel Brenneman, 15, of La Farge, started bat monitoring in 2016 as part of a school project. He continues to count bats at summer roosts and monitor their populations using acoustic detectors. He also builds and installs bat houses and gives bat presentations. "My favorite part is knowing I am making a positive change in the world, and that day I did something good for the planet. For me, there is just no better feeling."

Barbara Duerksen

"Birds give me joy, and I am willing to do something to give back," says Barbara Duerksen of Richland Center, who started birding as a kid on a Kansas farm. She got her start in citizen science reporting bird sightings for the Wisconsin Society for Ornithology (WSO) newsletter and volunteering for a federal bird survey. Barbara is the Richland County coordinator for the Wisconsin Breeding Bird Atlas II. She also has coordinated the Annual Midwest Crane Count for Richland County for 35 years, participated in the federal breeding bird survey for 33 years, and has served on the board for WSO.



JANE FURCHGOTT

Ron DeGraff

Ron DeGraff of Beloit started volunteering at State Natural Areas in Rock County in 2006, helping DNR staff throw cut cedar trees on huge bonfires to open an overgrown prairie. Since 2011, he has donated more than 600 hours to restore prairie by removing brush, coordinating firewood sales, conducting outreach to neighbors of properties, conducting rare animal surveys, removing weeds and helping install fire breaks. He also has served as a watchdog for Rock County State Natural Areas, collected and spread seeds, and burned countless numbers of brush piles.



SHARON FANDEL



MARCI HESS

Jim Hess

Jim Hess of Blanchardville grew up volunteering and, with his wife, Marci, has long helped at youth organizations and various other charities. "But our true love has always been with nature, and so we started directing our volunteer activities around nature," he says. Jim now counts bats at summer roosts, monitors and manages bluebird and kestrel nest boxes, surveys for rare plants, and leads volunteer workdays improving trout habitat. "My favorite part is getting out into nature and letting the stress of the world go away while doing something I truly enjoy."



DREW FELDKIRCHNER

Brenton Butterfield
*Species Management
Team Leader*

I'm a native Wisconsinite with a master's degree in environmental science and policy from UW-Green Bay. I started with DNR in May 2018 after eight years as a freshwater ecologist with a lake management planning firm. Our NHC team of biologists focuses on conserving Wisconsin's natural communities and aquatic/wetland rare and nongame species. Biologists on our team also provide expertise for and coordinate DNR's invasive species programs. I am thrilled about the opportunity to work in NHC to conserve and enhance Wisconsin's natural resources. I live with my husband, Bill, in Madison where we enjoy hiking, paddling, camping and spending time with friends.

Kelly Kearns

Invasive Plants Program Coordinator

Originally from Indiana, I went to Purdue University for horticulture and came to Wisconsin for graduate school in restoration ecology. I started working for NHC in 1983 and focused on rare plants and natural community restoration. As invasive plants became more of a concern, I have been focusing since the mid-1990s on policies, outreach and early detection efforts for invasive plants. I feel fortunate I have been able to help develop a program to address a rapidly growing threat to our biodiversity. In my free time, I garden and enjoy traveling with my husband and grown kids, exploring natural areas wherever we are.



DREW FELDKIRCHNER

Eva Lewandowski

Citizen-based Monitoring Coordinator

After completing a Ph.D. in conservation biology from the University of Minnesota, I joined NHC in 2016 and have been working to increase volunteer efforts to monitor our natural resources, especially rare and nongame species. I coordinate the Wisconsin Citizen-based Monitoring Network, consult on many of NHC's citizen-based monitoring efforts, and co-lead a new effort to monitor bumble bees, the Wisconsin Bumble Bee Brigade. As a lifelong volunteer myself, I continually am inspired by our state's dedicated citizen scientists. I strive to lead a sustainable, low-waste life, and I spend my free time reading, birding and sewing with reclaimed fabrics.



DREW FELDKIRCHNER

Justin Nooker

*Driftless Area State Natural Area
Crew Leader*

During my years as a University of Wisconsin-Stevens Point undergraduate, I was fortunate enough to work for Madison Audubon Society (Faville Grove Sanctuary) and The Prairie Enthusiasts (Mounds View Grasslands), which offered invaluable mentorship and fueled my interest in natural community management and restoration. Since then, I have worked four years leading the Northeast Region State Natural Area crew out of Green Bay and begin work in December as the Driftless Area State Natural Area crew leader. Two projects I have especially enjoyed working on have been the Wisconsin Breeding Bird Atlas II and Wisconsin Bumble Bee Brigade with DNR. If I'm not out stalking birds or bumble bees, you can find me trying to update rare plant occurrences — my true passion.



DREW FELDKIRCHNER



THANK YOU

Donors like you make a difference every day for Wisconsin's rare species and State Natural Areas. Give now and double your impact! Every gift is matched dollar for dollar and allows us to do more great work together. Become a donor today: dnr.wi.gov, keyword "NHC."



ARWUND BARTZ

Thanks to restoration work funded by the Paul E. Stry Foundation, endangered regal fritillary butterflies are using this habitat for the first time in 20 years.

Preserving prairies

Bob Swartz and other directors of the Paul E. Stry Foundation have helped save bluff prairies along the Mississippi River for more than a quarter century. Their seed money established a State Natural Area crew in La Crosse, and regular donations — including \$15,000 in 2018 — have funded restoration work at prairies in State Natural Areas. Less than 1 percent of prairies present at Wisconsin statehood remain.

"To buy a prairie and just own it doesn't preserve it. DNR has the staff, the equipment and the mission to do it."

– Bob Swartz

Going to bat for bats

After learning about bats from NHC's Jennifer Redell, these students from Isthmus Montessori in Madison raised \$185 at a school dinner and gave dinner guests their own presentation on bats. This summer, the "mini bat crew" helped Redell count bats emerging from bat houses.

Coco, Annie, Evie, Charlee, Maggie and Lyla present Jennifer Redell with a check for \$185 for bat conservation work.



NICKY MONDROSKI



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